

Claims

I claim:

1. A handheld apparatus for semi-automatically feeding and inserting members into pre-drilled holes depicting Braille letters on a sign face comprising:

a body having a lower portion and an upper portion, said upper portion comprising a hollow cylindrical storage tube, said cylindrical storage tube having an upper end and a lower end, and a cap situated on the upper end of the cylindrical storage tube;

the lower portion of the body is comprised of a grip and a tip assembly, the grip being fixedly attached and superimposed around the tip assembly, said tip assembly comprising an outer tube and an inner member delivery device;

said outer tube comprising a top end, a bottom end, an outer wall having a first diameter, an inner bore having a second diameter, and an upper closed face at the top end, said top end having an attaching area comprising a third diameter that is smaller than the first diameter;

said hollow cylindrical storage tube fitting over the third diameter of the outer wall of the outer tube of the tip assembly and affixed thereto with glue or some other such adhesive;

the upper closed face further comprising a center hole and an inclined edge, said inclined edge having a delivery tube hole, is thus situated within the hollow cylindrical storage tube;

the upper closed face further comprising a wire retainer hole and a wire fixedly seated within said wire retainer hole;

said inner member delivery device comprising an outer surface, a top portion, and a bottom delivery portion, the bottom delivery portion comprising a cut-out notch and a tapered portion extending upwards approximately one half the length of the cutout notch, said cut-out notch comprising a top face and a front face;

a first center bore disclosed through the inner member delivery device and extending from the top portion to a point approximately one-sixteenth of an inch from the cutout notch, the first center bore having a circumference, a top aperture and a first center bore bottom portion;

a second center bore extending from the first center bore bottom portion of the first center bore to the bottom delivery portion;

said second center bore creating a groove as it extends along the front face of the cutout notch;

a toe clip fixedly attached to the front face by screws or the like;

said inner member delivery device further comprising a cylindrical groove extending along the outer surface, said cylindrical groove having a delivery tube situated therein and fixedly attached therein, said delivery tube comprising an entry end and an exit end, said delivery tube extending a sufficient length above said inner member delivery device such that the entry end of the delivery tube is seated below said delivery tube hole of the inclined edge of the upper closed face when the apparatus is at rest;

the tapered portion of the bottom delivery portion comprising a tapered edge and a lower tapered portion, said lower tapered portion having an angled bore extending at an angle upwards and parallel with the tapered edge, said exit end of the delivery tube having a cutout embrasure that is aligned with the angled bore, thereby allowing a pathway for the spherical and non-spherical members to travel from the cylindrical storage tube to the bottom delivery portion;

a main pin fixedly attached to the outer tube, having a pin upper portion of a sufficient diameter to fit within the inner bore of the outer tube and slide within the first center bore of the inner member delivery device, and a pin lower portion of a sufficient diameter to slide within the second center bore, thereby moving up and down in concert with the movement of the inner member delivery device;

said outer tube being slidably connected to and disposed around the inner member delivery device, thus allowing the inner member delivery device to freely move within a predetermined range up and down within the outer tube;

the bottom end of the outer tube further comprising a sleeve, fixedly attached and superimposed around the outer wall, said sleeve having an inner diameter essentially equal to the first diameter of the outer wall of the outer tube;

a spring disposed around the inner member delivery device, said spring being prevented from extending lower than a point approximately one-quarter of an inch from the top face of the cutout notch by a stopping means, thereby acting as a compression spring thereby causing the main pin to move downwards within the inner member delivery device;

whereby the members are held in the hollow cylindrical storage tube and sequentially drop into the delivery hole on the inclined edge of the upper closed face and travel down the delivery tube, the downward motion aided by gravity, and each spherically or non-spherically shaped member continuing to travel through the delivery tube, entering the angled bore and continuing down the angled bore, at which time the spherically or non-spherically shaped member is stopped by contacting the toe clip, the continued downward movement of the apparatus by the operator causing the bottom delivery portion to contact the sign face, thereby compressing the spring which pushes the inner member delivery device upwards, causing the main pin to slide down, whereby the spherically or non-spherically shaped member, being held by the toe clip, is then pressed into the hole on the sign face by the main pin as the apparatus continues its downward movement, the continued downward movement causes the main pin to push the member free of the toe clip and into the pre-drilled hole, the main pin then acting as a valve to prevent the next or subsequent member from exiting the angled bore.

2. The apparatus of claim 1 wherein the members are spherically shaped.
3. The apparatus of claim 1 wherein the members are non-spherically shaped.
4. A handheld apparatus for semi-automatically feeding and inserting members into pre-drilled holes depicting Braille letters on an architectural sign face comprising:

a body having a lower portion and an upper portion, said upper portion comprising a hollow cylindrical storage tube, said cylindrical storage tube having an upper end and a lower end, and a cap situated on the upper end of the cylindrical storage tube;

the lower portion of the body is comprised of a grip and a tip assembly, the grip being fixedly attached and superimposed around the tip assembly, said tip assembly comprising an outer tube and an inner member delivery device;

said outer tube comprising a top end, a bottom end, an outer wall having a first diameter of 0.50 inches, an inner bore having a second diameter of 0.375 inches, and an upper closed face at the top end, said top end having an attaching area comprising a third diameter of 0.375 inches;

said hollow cylindrical storage tube fitting over the third diameter of the outer wall of the outer tube of the tip assembly and affixed thereto with glue or some other such adhesive;

the upper closed face further comprising a center hole of 0.125 inches and an inclined edge, said inclined edge having a delivery tube hole of 0.095 inches, is thus situated within the hollow cylindrical storage tube;

said inner member delivery device comprising an outer surface, a top portion, and a bottom delivery portion, the bottom delivery portion comprising a cut-out notch and a tapered portion extending upwards 0.15 inches, said cut-out notch comprising a top face of 0.154 inches and a front face of 0.297 inches;

a first center bore disclosed through the inner member delivery device and extending from the top portion to a point approximately one-sixteenth of an inch from the cutout notch, the first center bore having a circumference of 0.156 inches, a top aperture and a first center bore bottom portion;

a second center bore having a diameter of 0.067 inches extending from the first center bore bottom portion of the first center bore to the bottom delivery portion;

said second center bore creating a groove as it extends along the front face of the cutout notch;

a toe clip fixedly attached to the front face by screws or the like;

said inner member delivery device further comprising a cylindrical groove extending along the outer wall, said cylindrical groove having a delivery tube of 0.07 inches in diameter situated therein and fixedly attached therein, said delivery tube comprising an entry end and an exit end, said delivery tube extending a sufficient length above said inner member delivery device such that the entry end of the delivery tube is seated below said delivery tube hole of the inclined edge of the upper closed face when the apparatus is at rest;

the tapered portion of the bottom delivery portion comprising a tapered edge and a lower tapered portion, said lower tapered portion having an angled bore of 0.07 inches in diameter extending at an angle upwards and parallel with the tapered edge, said exit end of the delivery tube having a cutout embrasure that is aligned with the angled bore, thereby allowing a pathway for the spherical and non-spherical members to travel from the cylindrical storage tube to the bottom delivery portion;

a main pin of approximately 3.4806 inches in length fixedly attached to the outer tube, having a pin upper portion of a sufficient diameter to fit within the inner bore of the outer tube and slide within the first center bore of the inner member delivery device, and a pin lower portion of a sufficient diameter to slide within the second center bore, thereby moving up and down in concert with the movement of the inner member delivery device;

said outer tube being slidably connected to and disposed around the inner member delivery device, thus allowing the inner member delivery device to freely move within a predetermined range up and down within the outer tube;

the bottom end of the outer tube further comprising a sleeve, fixedly attached and superimposed around the outer wall, said sleeve having an inner diameter essentially equal to the first diameter of the outer wall of the outer tube;

a spring disposed around the inner member delivery device, said spring being prevented from extending lower than a point approximately one-quarter of an inch from the top face of the

cutout notch by a stopping means, thereby acting as a compression spring thereby causing the main pin to move downwards within the inner member delivery device;

whereby the members are held in the hollow cylindrical storage tube and sequentially drop into the delivery hole on the inclined edge of the upper closed face and travel down the delivery tube, the downward motion aided by gravity, and each spherically or non-spherically shaped member continuing to travel through the delivery tube, entering the angled bore and continuing down the angled bore, at which time the spherically or non-spherically shaped member is stopped by contacting the toe clip, the continued downward movement of the apparatus by the operator causing the bottom delivery portion to contact the sign face, thereby compressing the spring which pushes the inner member delivery device upwards, causing the main pin to slide down, whereby the spherically or non-spherically shaped member, being held by the toe clip, is then pressed into the hole on the sign face by the main pin as the apparatus continues its downward movement, the continued downward movement causes the main pin to push the member free of the toe clip and into the pre-drilled hole, the main pin then acting as a valve to prevent the next or subsequent member from exiting the angled bore.

5. The apparatus of claim 4 wherein the member is spherically shaped.
6. The apparatus of claim 5 wherein the member is non-spherically shaped.